BLM

Surprise Field Office

Calcutta Allotment #01100

DOCUMENTATION FORM FOR DETERMINATIONS:

ACHIEVEMENT OF RANGELAND HEALTH STANDARDS,

CONTRIBUTING FACTORS AND APPROPRIATE ACTION PRIORITIES

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BLM - SURPRISE FIELD OFFICE

Calcutta Allotment #01100

DOCUMENTATION FORM FOR DETERMINATIONS: ACHIEVEMENT OF RANGELAND HEALTH STANDARDS, CONTRIBUTING FACTORS AND APPROPRIATE ACTION PRIORITIES

THIS FORM DOCUMENTS, FOR THE INDICATED AREA: (1) DETERMINATIONS AND SUPPORTING RATIONALE REGARDING IF FUNDAMENTAL RANGELAND HEALTH CONDITIONS CITED IN 43 CFR 4180.1 EXIST IN THESE AREAS; (2) DETERMINATIONS, IN CASES WHERE ONE OR MORE CONDITIONS OF FUNDAMENTAL RANGELAND HEALTH DO NOT EXIST, REGARDING THE STANDARD(S) THAT IS (ARE) NOT ACHIEVED; (3) DETERMINATIONS, IN THOSE CASES WHERE ONE OR MORE STANDARDS ARE NOT ACHIEVED, REGARDING THE CONTRIBUTING FACTOR(S) THAT IS (ARE) PREVENTING STANDARD(S) ACHIEVEMENT OR IS (ARE)PREVENTING SIGNIFICANT PROGRESS TOWARDS ITS (THEIR) ACHIEVEMENT; AND, (4) THE INFORMATION THAT WAS EXAMINED THAT SUPPORT THESE DETERMINATIONS.

Indicate the date(s) or period the information review occurred: 1982 to March 2009.

PART I - IDENTIFICATION OF RELEVANT AREA

Α.	Indica	ate area where these determinations and rationale apply:
	1	Site (Specific Geographic Area) within Management Unit (allotment or pasture):
		Allotment name/no.: _
		Place name:
		Legal location (if needed to ID site):
		Approximate size in acres: <u>acres</u>
		(or linear length if lotic riparian)
	2.	Management Unit (allotment or pasture - list name / no. / acres):
		Calcutta Allotment-12,535 acres
	3.)	Landscape (identify by groups of management units, or by watershed if cross-cutting MU's and list):
	4.	Other Stratification (identify - e.g., all riparian areas in XYZ Pasture):

PART II - IDENTIFICATION OF INFORMATION REVIEWED

The following information (e.g. monitoring, literature, personal communication, etc.) was considered to determine standards attainment and, if applicable, contributing factor(s) to their non-achievement and failure to make significant progress towards their achievement.

Summary of Rangeland Health Assessment Field Data Indicators Observed at the evaluation sites on the Calcutta Allotment, April - July 2008:

Rangeland	d Health Attributes	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	Σ
Soils	Soils/Site Stability Indicators 1-9 & 11				7	33	40
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 &14			4	9	27	40
Biotic	Biotic Integrity Indicators 8-9 & 11- 17			9	8	19	36

(Field data indicators in greater detail and by ecological site are found in Attachment A)

Discussion of Specific Indicators (as needed):

Calcutta Allotment 2008 Evaluation Sites:

<u>Pasture / Use Area Name</u>	<u>Site Number</u>	Ecological Site Name	<u>% of Allotment</u>
Native	NV 23 - 31	Claypan 10 - 14" P.Z.	45%
Jeep Fire (Seeded)	NV 23 - 20	Loamy 10 - 12" P. Z.	7%
Native	NV 23 - 05	Dry Floodplain	13%
Jeep Fire (Seeded)	NV 24 - 22	Sodic Terrace 8 - 10" P.Z.	7%

Data of amounts of cover, litter, etc., collected in the field and compared with the ecological site descriptions can be found in appendix B for the information discussed below.

Native Pasture, SMU #1166, NV 23 - 31, Claypan 10 - 14" P.Z.

Three moderate departures for "Litter Amount", "Annual Production" and "Invasive plants" were observed in the Native Pasture on a Claypan 10 - 14" P.Z. (Low sagebrush – bluebunch wheatgrass/Thurber's needlegrass) ecological site. The moderate departure ratings were based on the quantity of bluebunch wheatgrass and Thurber's needlegrass present on site, although they were present the site has the potential to support these two grasses as the dominant and co-dominant perennial grasses. The low composition of these grasses leads to lower annual production and the amount of litter measured at the site. Western juniper is also increasing and is not a component of the vegetative community as outlined on the ecological site description. Therefore juniper is considered an invasive species on this site.

Jeep Fire (Seeded) Pasture, SMU #1328, NV 23 - 20, Loamy 10 - 12" P. Z.

Two moderate departures for "Litter Amount" and "Annual Production" were observed in the Jeep Fire (Seeded) Pasture on a Loamy 10 - 12" P. Z. (big sagebrush – bluebunch wheatgrass/Thurber's needlegrass) ecological site. The moderate departure ratings were based on the quantity of bluebunch wheatgrass and Thurber's needlegrass present on site, although they were present they have the potential to be the dominant and co-dominant perennial grasses. Cover and distribution of perennial grasses was also lower than expected amounts for the site, which decreased the amount of annual production for the site since perennial grasses would be the largest biomass producers. Consequently, the decreased amount of annual production by grasses results in lower accumulations of litter for this site.

Native Pasture, SMU #1321, NV 23 - 05, Dry Floodplain

Five moderate departures for the "Plant Community Composition and Distribution Relative to Infiltration", "Functional/Structural Group", "Litter Amount", "Annual Production" and "Reproductive capability of perennial plants" was observed in the Native Pasture on a Dry Floodplain (Basin big sagebrush – Great Basin wildrye) ecological site. The moderate departure ratings were based on the current production of Great Basin wildrye on this site, Great Basin wildrye is potentially the dominant perennial grass for this site. Since 800-1200 lbs/acre of production a year could be produced in this site from wildrye alone, the decreased cover and distribution of basin wildrye resulted in decreased annual production, litter and the reproductive capability ratings for this site.

<u>Jeep Fire (Seeded) Pasture, SMU #1310, NV 24 - 22, Sodic Terrace 8 - 10" P.Z.</u> No departures over slight - moderate.

A. Information relevant to UPLAND SOILS, STANDARD 1:

Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform, and exhibit functional biological, chemical, and physical characteristics.

Meaning that: Precipitation is able to enter the soil surface and move through the soil profile at a rate appropriate to soil type, climate, and landform; the soil is adequately protected against human caused wind or water erosion; and the soil fertility is maintained at, or improved to, the appropriate level.

Information Reference (i.e. identify the information source used by type and date)

Comments / Remarks: Answers to the following were based on the field data collected on the Calcutta Allotment #1100 in April - July of 2008, along with the interpretation and analysis of monitoring data, management records, and other observations on the allotment from 1997 to 2007. Soils and ecological site information was obtained from the 1999 Soil Survey of Washoe County, North Part.

Criteria

- 1. IS ground cover (vegetation, litter, and other types of ground cover, such as rock fragments) sufficient to protect sites from accelerated erosion? Yes, the attribute rating for Soil/Site Stability was rated as stable and the Hydrologic Function rated as functioning for all four evaluations sites. Most sites are represented by a diversity of shrubs, forbs and perennial grasses, although a portion of the Dry Floodplain site was lacking the dominant perennial grass. The Line-Point Intercept and Gap Intercept transect data collected on the allotment verifies sufficient ground cover (vegetation, litter, rock, etc.) to protect sites from accelerated erosion.
- 2. IS evidence of wind and water erosion, such as rills and gullies, pedestalling, scour, or sheet erosion, and deposition of dunes either absent or, if present, does not exceed what is natural for the site? Yes, as stated above, the attribute rating for Soil/Site Stability rated stable and the Hydrologic Function rated as functioning for all four sites. Ocular observation on allotment visits in June July of 2008 also verified the above ratings. The soils in the allotment have sufficient cover (rock, vegetation and litter) to protect the soil from wind and water (raindrop and surface flow) impacts for the allotment.
- 3. IS vegetation vigorous and diverse in species composition and age class, and does it reflect the Potential Natural Community or Desired Plant Community for the site? Yes, on most sites observed. The Dry Floodplain site was lacking the dominant perennial grass (Great Basin wildrye) in the quantity for which this site is potentially capable. Although several plants were observed, many of these were found in shrub cover. The Loamy 10 12" site is dominated by crested wheatgrass because the area was seeded after the Jeep Fire in 1979, although native species are also present on site. Overall, the vegetation in the allotment is vigorous and diverse and reflects the potential natural community (PNC) of each ecological site represented.
- B. <u>Information relevant to the STREAM HEALTH, STANDARD 2:</u>

Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:

Stream channel form and function are characteristic for the soil type, climate, and landform.

Meaning that: Channel gradient, pool frequency, width to depth ratio, roughness, sinuosity, and sediment transport are able to function naturally and are characteristic of the soil type, climate, and landform.

Comments / Remarks: This standard is not applicable to the Calcutta Allotment. The surface water in the allotment is associated with shallow ephemeral lakebeds, several ephemeral drainage systems and springs/seeps that are classified as lentic systems.

Criteria

- 1. ARE gravel bars and other coarse textured stream deposits successfully colonized and stabilized with woody riparian species? **N/A**
- 2. IS streambank vegetation vigorous and diverse, mostly perennial, and holding/protecting banks during high streamflow events? **N/A**
- 3. DOES the stream water surface have a high degree of shading, resulting in cooler water in summer and reduced icing in winter? **N/A**
- 4. ARE portions of the primary floodplain frequently flooded (inundated every 1 to 5 years)? N/A

C. Information relevant to the WATER QUALITY, STANDARD 3:

Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the State standards within the respective boundaries of the States of California and Nevada.

Comments / Remarks: Surface and groundwater are associated with ephemeral drainages, springs/seeps, pit reservoirs and wells. Neither surface water nor groundwater within the allotment has been listed for exceeding State water quality standards. All springs/seeps, pit reservoirs and groundwater are currently meeting the needs of beneficial uses for watering livestock and wildlife.

Indications

1. ARE the chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and

dissolved oxygen levels within the applicable requirements? N/A

- 2. ARE the standards for riparian, wetlands, and water bodies achieved? N/A
- 3. DO aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants) indicate support for beneficial uses? N/A
- 4. ARE there acceptable results from implementation and effectiveness monitoring or changes in management to address deficiencies identified by such monitoring? **N/A**

D. Information relevant to the RIPARIAN AND WETLAND SITES, STANDARD 4

Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:

Riparian and Wetland areas are in properly functioning condition and are meeting regional and local management objectives.

Comments / Remarks: In 1993, Boiler Spring, Antelope Spring, an unnamed channel, Dog Spring, Jeff's Jeep Spring, Sorry Spring, and View Spring were rated as Functional at Risk (FAR) with an upward trend however at that time several livestock developments were rated as well.

Springs on the Calcutta Allotment include: Antelope Spring, Dog Spring, Boiler Spring, View Spring, Sorry Spring, Jeff's Jeep Spring, Moshaw, and two unnamed springs.

Antelope Spring is in the seeded pasture, and includes a headbox on the spring source that fills 2 troughs roughly .02 miles downhill. The overflow from these troughs flows into the original stream channel that existed prior to development. This water flows downstream roughly .17 miles into Jeepfire Reservoir 5 (reach 1). The overflow from this stockpond continues flowing another .7 miles into Jeepfire Reservoir 4 (reach 2), which has an overflow that travels about .3 miles into a Jeepfire Reservoir 3 (reach 3). After the third stockpond, the water flows down an ephemeral drainage about .6 miles and meets Calcutta Lake (reach 4), an ephemeral dry lakebed. This system has no exclosures, although there is a fence downstream of Jeepfire Reservoir 3 that divides the Seeded Pasture and the Gathering Field. Reach 4 is within the Gathering Field.

In 1993, Antelope Spring was judged as a .66 mile spring and stream. It was rated as having all the criteria required for vegetative, hydrologic and erosional deposition health which were applicable to the system. In a 1986 evaluation of Antelope Spring, the spring was rated as 'Fair' and it was suggested that the spring source be fenced. The unnamed channel of 1993 is referred to as reach 3 and 4 in 2008. In 1993 this reach was found to be meeting all hydrology, vegetation and erosion/deposition criteria representative of a healthy riparian system.

Antelope spring was split into two systems for rating purposes in 2008; 1) the source and reach 1 and 2) reaches 2, 3, and 4. The source is a perennial spring that provides varying amounts of water throughout the year. System 1 is a riparian system that contains some amount of water throughout the year. Together the source and reach 1 consist of about 1 acre of riparian habitat. This section of the Antelope Spring system was rated in October, 2008 as Functional at Risk (FAR) with no apparent trend. There is some hoof shearing occurring on the stream reach and an adjacent road may be contributing to riparian impacts. Although some rosa sp. was found, there is a potential for a larger amount of woody species to inhabit this site. Reaches 2, 3, and 4 are ephemeral streambeds, which are dry throughout much of the year. These portions of the Antelope Spring system were rated as Proper Functioning Condition (PFC) in October of 2008. The dams on this part of the system have likely affected the surface flow, however the hydrology, vegetation and erosion/deposition were all found to be representative of a healthy riparian system. Reach 2, 3, and 4 combined consist of no more than 13 acres of riparian habitat.

Dog Spring is in the seeded pasture, and includes a small stockpond near the spring source with an overflow into the original floodplain. The system below the stockpond consists of less than 1 acre of riparian vegetation. When rated in 1993, this spring was considered to have all of the criteria required for vegetative, hydrologic and erosional deposition health which were applicable to the system. No additional photos or notes were taken in 1993, however photographs and notes were taken in 1986, at which time the Dog Spring was rated as 'Satisfactory'. Both the 1993 rating and the 1986 photos and notes were used in the 2008 RFA. This spring was visited on July 24, 2008. The system below the stockpond, but not including the stockpond, was rated in October, 2008 as FAR with no apparent trend. This rating of FAR is due to the flow pattern being altered by hoof action and trailing. The pictures of this system dating back 20 years display a system with the same characteristics as seen today, so therefore no trend is apparent. It is also likely that the stockpond at the top of this system has contributed to alterations in the flow pattern.

Boiler Spring was rated in 1993 as FAR and had an exclosure built around the spring source in 1997. In 1993 the vigor of the riparian vegetation was questioned, and due to the amount of water being greater subterranean than on the surface, a fence and stock pond was found to be a suitable solution. The exclosure is roughly .1 acre in size, and within it there is a headbox at the spring source which pipes water outside the exclosure to two troughs. There is one trough on the native pasture side, and one in the seeded pasture. The entire riparian area is less than .2 acres. The site was visited in 2008, and was found to be in PFC.

View Spring, Sorry Spring, and Jeff's Jeep Spring are all small (less than ½ acre), undeveloped seep/springs that were originally rated as FAR in 1993. In 1993, View Spring was found to have no widening of the riparian zone, and the vigor of the riparian vegetation was thought to be less than was possible for the site. Sorry Spring was found (in 1993) to have no widening of the riparian zone, the upland watershed was thought to be contributing to the degradation, and the vigor of the riparian vegetation was thought to be less than was possible for the site. Both View and Sorry Spring were searched for in 2008, and were not located. The lack of riparian vegetation indicates that these 'springs' were misclassified originally, and do not provide adequate water to produce hydric soils or the associated vegetation. In 1993, Jeff's, Jeep Spring had neither a diverse age structure or a diverse composition of vegetation. This may be explained by the severely intermittent water quality this seep has exhibited. This spring was found in 1986, (it was speculated that it was a new spring) apparently capable of having intermittent water due to the recent loss of shrubs from the Jeep Fire. The spring was rated as 'poor/unsatisfactory in 1986. Jeff's Jeep Spring was located in 2008, but does not have surface water with any regularity. Lack of riparian vegetation indicates that this spring was misclassified originally, and does not provide sufficient water to produce hydric soils or the associated riparian vegetation. For these reasons the three springs were misclassified as riparian areas, and are considered for this RHA determination.

Moshaw Spring is on the north end of the Native Pasture. It consists of an undeveloped spring source which runs for roughly .02 miles into a stockpond, and then the overflow runs roughly .015 miles before reaching the Calcutta Allotment boundary fence line. The section of the system starting at the spring source and ending above the stock pond was considered for this evaluation. The .02 mile reach of stream and the associated riparian area covers roughly ½ acre. There is no exclosure fencing on this spring, and minimal hoof action is found on the stream reach. Moshaw Spring was rated as PFC in October of 2008.

An Unnamed Spring is on the west side of the Allotment in the Native Pasture. This is an ephemeral spring with no developments or fencing. The entire area is less than 1 acre. This spring was visited in November of 2007 and 2008. It was established in the first visit that the site is receiving some impact from hoof action. This site was rated as Functioning at Risk with no apparent trend in November of 2008.

An Unnamed Spring in the Gathering Field (northwest of Jeepfire Reservoir 2) was visited in July of 2008. There were no previous records for this site. This site was rated as PFC, due to diversity and vigorousness of vegetation. Use was minimal and there are *rosa sp.* present at the spring head. The entire area is less than 1 acre.

Criteria

- 1. IS riparian vegetation sufficiently vigorous, mostly perennial, and sufficiently diverse in species composition, age class and life form to stabilize stream banks and shorelines? Yes, on most riparian areas rated in 2008, there was found to be a diverse age-class distribution of riparian and wetland vegetation, showing that there is vegetative recruitment needed for maintenance and recovery of these sites. The unnamed spring south of Norma Pit and the Dog Spring both had insufficient data available to ascertain if all age classes of vegetation were represented adequately. Composition was found to be comprised of suitably diverse riparian-wetland vegetation on most sites. The unnamed spring south of Norma Pit again had insufficient data available to establish if the vegetative composition was suitably diverse, due to the season of the visit and the use the area had incurred, it could only be established that both *Carex sp.* and *Juncus sp.* were present.
- 2. IS riparian vegetation and large woody debris well anchored and capable of withstanding high streamflow events? Yes, all sites visited displayed well anchored riparian vegetation.
- 3. IS accelerated erosion (as a result of human related activities) evident? Yes, on some sites there is hoof shearing and pocking present. In addition the road adjacent to Antelope Spring may be contributing to erosion.
- 4. ARE age class and structure of woody riparian and wetland vegetation appropriate for the site? Yes, on most sites. However Antelope Spring (source and reach 1) appears to have a potential for a greater amount and diversity of woody species than is presently found at the site. It is currently unknown whether any of the sites not supporting woody vegetation have the capability for woody vegetation. No indication of previously existing woody vegetation was found (no tree or shrub skeletons) on any site.

E. <u>Information relevant to the **BIODIVERSITY STANDARD 5**:</u>

Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:

Viable, healthy, productive, and diverse populations of native and desired plant and animal species, including special status species, are maintained.

Meaning that: Native and other desirable plant and animal populations are diverse, vigorous, able to reproduce, and support nutrient cycles and energy flows.

Indicator(s) Observed	Information Reference
☑ plant vigor (production, mortality, decadence)	Field visits, field data, and photographs,1993 RFA, 2008 RHA.
☑ diversity of age classes	Field visits, field data, and photographs,1983 field data, 1993 RFA, 2008 RHA.
☑ recruitment	Field visits and field data, 1983, 1993, 2008
☑community structure (layers)	Field visits, field data, and photographs, 1983, 1993, 2008
☑ community diversity	Field visits, field data, and photographs, 1983, 1993, 2008
☑ exotic plants (or invaders)	Juniper and minimal amounts of cheatgrass. (Field visits, field data, and photographs)
☑ wildlife life forms present (obligate)	Sagebrush obligates include: Greater sage-grouse (BLM sensitive) NDOW and BLM data from 1950's to present and, pygmy rabbit (Larrucea, 2006) and sage-sparrow. Other wildlife seen or sign found, include, coyote, waterfowl using the reservoirs and saltgrass flats in spring, ground squirrel, black-tailed jackrabbits, cottontail, antelope, deer, and bats (<i>Myotis</i> sp.).
☑special status species	Bighorn sheep (state listed); NDOW 2007, golden eagle and sage-grouse (BLM sensitive); NDOW and BLM data from 1950's to present.

Criteria

- 1. DO wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations? Yes, Recent photos of the 2005 Barrel Fire show that upland vegetation is returning. Native shrubs and grasses are reestablishing the site. The Jeep Fire of 1979 was planted to crested wheatgrass and therefore would not be expected to provide the same habitat characteristics as native habitats. While crested wheatgrass does provide forage for deer, pronghorn, elk, small rodents and birds, the crested wheatgrass seeding is not considered to be as productive as it was upon original planting. This decline in crested wheatgrass productivity is due to the age of the seeding (almost 30 years old), as well as sagebrush and other native plants are reestablishing themselves thereby somewhat reducing the amount of crested wheatgrass.
- 2. ARE a variety of age classes present for most species? Yes. On upland sites (at assessed sites and throughout the allotment) there is a good representation of age classes for shrubs and grasses. On sites that have had recent disturbance (burned areas) there is obvious growth and establishment of native perennial bunchgrasses as well as sagebrush seedlings and many native forbs. The Dry Floodplain site has diminished diversity of age groups for Great Basin Wildrye.
- 3. IS vigor adequate to maintain desirable levels of plant and animal species to ensure reproduction and recruitment of plants and animals when favorable events occur? Yes, reproductive capability was rated as a moderate departure on only one of the four sites assessed, which represented about 13 % of the allotment. Vigor in the Jeep Fire seeding appears to be less now than when compared to the vigor expressed directly following seeding, likely due to the reestablishment of native vegetation within the seeding. In addition, portions of the Jeep Fire Seeding have received heavy utilization since 1982, (consistent with MFP) and have not received rest since 1997. Reproduction of plants is considered to be appropriate for each site's potential within the remainder of the allotment. On at least two sites, *Poa* (considered an increaser under heavy grazing use) appears to have increased since 1977, however the key native deep rooted perennial grasses appear to have remained static since 1977. Great Basin Wildrye has been lacking in the Dry Floodplain site since the 1970's (as evidenced by historic data and notes), however it appears to be increasing slightly.
- 4. DOES the distribution of plant species and their habitats allow for reproduction and recovery from localized catastrophic events? Yes, judging by the positive response of native species in the Barrel Fire area. However, an estimated 29% of the allotment is classified as being encroached by juniper. Soils have support the Claypan 10-14 ecological site comprise 45% of the Calcutta Allotment. The ecological site description does not include any inclusions of juniper habitat, however juniper is found concentrated throughout this site in the Calcutta Allotment. This may negatively affect some species like sage-grouse but could be having some benefits to others like mule deer or antelope in terms of hiding and thermal cover. In addition, increasing prevalence of juniper throughout the native pasture could negatively affect the amount of water available at springs throughout the allotment. Although the current juniper presence has not shifted this ecological site into nonattainment of standards or inability to respond to localized catastrophic events yet, if left unabated the juniper will eventually pass a threshold of prevalence where the Claypan 10-14" site will no longer be meeting standards or be capable of responding to catastrophic events.

- 5. ARE natural disturbances, such as fire, evident, but not catastrophic? Yes. Fire has occurred recently on about ¼ of the allotment due to the 1979 Jeep and 2005 Barrel wildfires. While the fire "scar" is evident, perennial grasses are abundant in the Barrel Fire but sagebrush has been reduced. The Barrel Fire burned large and small juniper trees in the allotment, as evidenced by the tree skeletons and stumps remaining as well as the remaining vegetation adjacent to burned areas. The Jeep wildfire was seeded with crested wheatgrass, which appears to be less productive than when it was first seeded, partially due to the reestablishment of native vegetation. The Barrel Fire was not seeded after the fire and native grasses and forbs are reestablished. Sagebrush seedlings are also found throughout the Barrel Fire area.
- 6. ARE non-native plant and animal species present at acceptable levels? Yes. Cheatgrass has been found in several areas after the Barrel Fire but is not a major component of the vegetation in those areas.
- 7. ARE habitat areas sufficient to support diverse, viable, and desired populations, AND are they adequately connected with other similar habitat areas? Yes, desired populations including sagebrush obligate species are present on the Calcutta Allotment. Data from NDOW and field observations indicate that the allotment is used to some extent by bighorn sheep with sign found at Antelope Spring. One active pygmy rabbit burrow is located just inside the eastern edge of the allotment. Based on the 2006 field office wide survey for pygmy rabbit, other active burrow sites may be present in the lower elevations of the allotment. Although saltgrass is present on the allotment, other habitat components are not suitable for Carson wandering skipper due to the lack of nectar sources. Saltgrass areas within the allotment are more than 500 feet above the known elevation limit for Carson wandering skipper and approximately 100 air miles from the closest known Carson wandering skipper populations in Lassen County, California. The variety of habitat conditions is also suited to many other game and non-game species typical to Great Basin sagebrush communities.

Based on landowner input, and brood and harvest data dating back to the 1950's from NDOW, sage-grouse use in this allotment declined following a local increase in grouse numbers in the early 1960's. It is unknown why sage-grouse have declined but the decline is not localized to this allotment.

While high and low population trends are similar annually to the adjacent Sheldon National Wildlife Refuge (Sheldon), numbers of sage-grouse are generally higher on the Sheldon, due in part to the higher production numbers (chicks/hen) reported for the Sheldon. Consistent lek counts for bird attendance have occurred since 2002 on the Surprise Field Office and since about 1990 for the Sheldon National Wildlife Refuge. Survey numbers show that recently sage-grouse populations peaked between 2004-2007 for both the Surprise Field Office and the Sheldon. Some increases, at least for the Surprise Field office, are due in part to more recent survey intensity as well as to the discovery of new leks. In 2008 lek count numbers declined drastically on both the Surprise Field Office and the Sheldon.

Local decreases in sage grouse activity could in part be due to two large fires (which collectively have burned about ¼ of the allotment). Two active sage-grouse leks within four miles of the allotment indicate that sage grouse use habitat within the Calcutta Allotment seasonal. Sage-grouse use was noted throughout the northern (un-burned) half of the allotment in areas which could be suitable as lek sites. Observations made in the spring of 2008 on the Claypan soils and adjacent to the pasture division fence, indicated that at least in that area, residual grasses were more than adequate for smaller ground nesting birds and in some areas grasses and other vegetation were dense and tall enough for sage-grouse. Observations in the summer of 2008 indicated that habitat in the northern half of the allotment (edge of Claypan and dry floodplain sites) also would provide quality habitat for most ground nesting birds.

The Cow Lake golden eagle nest (located about 0.1 miles outside and overlooking the allotment) was monitored in 2002, 2006, and 2007 and had activity every year. Due to the location of the nest, it is unknown if young were ever produced or fledged from this nest.

GIS data indicates that there is adequate connectivity between unburned habitats. The Barrel Fire burned as "fingers" into the Calcutta Allotment, leaving unburned habitat between relatively narrow burned areas. Post fire photos of the Barrel Fire show excellent re-growth of vegetation in the fire including native perennial grasses and forbs.

Much of the allotment is considered summer or fall/transition habitat for mule deer and summer habitat for pronghorn antelope. Field observations indicate that bitterbrush communities are generally in good condition and there is plenty of juniper as well for food and cover for mule deer during the time they are using the allotment. In the summer of 2008, unused grass was noted throughout the north half (native pasture) of the allotment and would therefore be considered available for pronghorn and bighorn use. Forbs production (especially noted as important for pronghorn, bighorn and sage-grouse) in the early spring was noted as adequate for the sites visited.

8. IS adequate organic matter (litter and standing dead plant material) present for site protection and decomposition to replenish soil nutrients and maintain soil health? Yes. Although one of four sites had less litter than the ecological site description capability, this site had a large amount of biotic crust providing soil protection. There is adequate litter to provide site protection from soil erosion and contribute nutrients to the soil on the other three of four sites, as evidenced by the stability of the soil throughout the allotment.

PART III - SUMMARY OF STANDARDS ACHIEVEMENT DETERMINATION AND RATIONALE

A. DETERMINATION ON STANDARDS ACHIEVEMENT

As of the date of the completion of this form, an examination of the information listed in Part II and recent field visits, if applicable, indicate the following with regard to standards achievement for the area identified in Part I:

Standard	Determi	nati	on on Standard Achievement (check a	appropriate box for each standard)
Upland Soils		/	Not met but progressing towards /	Not met and not progressing towards / N/A
Stream Health	Met	/	Not met but progressing towards /	Not met and not progressing towards / ☑ N/A
Water Quality	Met	/	Not met but progressing towards /	Not met and not progressing towards / ☑N/A
Riparian/Wetland	Met	/	☑ Not met but progressing towards /	Not met and not progressing towards / N/A
Biodiversity	Met	/	☑ Not met but progressing towards /	Not met and not progressing towards / N/A

B. RATIONALE SUPPORTING STANDARDS ACHIEVEMENT DETERMINATION

The Standard for Upland Soils is currently being met for the Calcutta Allotment #01100. The standard achievement determination was based on information/data from the 1999 Washoe County Soil Surveys - North Part, Calcutta Upland Health Assessments, Line-Point Intercept data, Soil Site Stability data, actual use data, composite utilization mapping and photos taken during the assessment process, along with the interpretation and analysis of the allotment management plan, monitoring data, and observations on the allotment since 1988. Data from the four Upland Health Assessments rated Soil/Site Stability as stable and for Hydrologic Function as functioning for all sites evaluated. Ocular observations made during the upland health assessments in the Calcutta Allotment verified the above determination that the allotment has an abundance of total cover to protect the soil from wind and water (raindrop and surface flow) impacts and the Soil Stability ratings is within the range for the reference sites. The only Soil Site Stability rating that was lower than the reference range was on an ashy soil (Dugway ashy fine sandy loam 0-2% slope) which explains why the rating was lower than the reference site (verified with NRCS Soil Scientist Steve Slusser (retired), Reno State Office).

Line Point Intercept data on four of the evaluation sites:

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Site Average for the Loamy 10 – 12" ecological site.
49% Canopy Cover, 24% Bare Ground, 9% Basal Cover and 55% Litter Cover
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Site Average for the Claypan 10 – 14" ecological sites. 66% Canopy Cover, 12% Bare Ground, 10% Basal Cover and 40% Litter Cover

Site Average for the Sodic Terrace 8 - 10" ecological site. 42% Canopy Cover, 26% Bare Ground, 8% Basal Cover and 60% Litter Cover

Site Average for the Dry Floodplain ecological site. 47% Canopy Cover, 29% Bare Ground, 18% Basal Cover and 39% Litter Cover

Line-Point Intercept and Gap Intercept transect data collected on the Calcutta Allotment in April and May, 2008 is summarized in the tables in Attachment B and C, respectively.

The Standard for Stream Health: N/A - There are no perennial streams located on public lands within the allotment only ephemeral drainages which run for a short period of time during the winter and early spring runoff period.

The Standard for Water Quality: N/A - Surface and ground water are associated with ephemeral drainages and ephemeral lakes, springs/seeps, pit reservoirs and wells that are currently meeting the needs of beneficial use for watering livestock and wildlife. Neither surface water nor groundwater within the allotment has been listed for exceeding State water quality standards.

The Standard for Riparian Wetland Areas is currently not being for the Calcutta Allotment #1100. Seven springs were rated, and three small springs were not rated. Four of those springs rated had portions that were developed. The developed portions are exempt from the Riparian and Wetland Standards in accordance with the Rangeland Health Standards and Guidelines for California and Northwestern Nevada Final EIS ROD. Antelope Spring was rated in two sections, with one section being rated as FAR and one section being rated as PFC. One spring is fenced and not being impacted by livestock grazing use. In total, four springs were rated as FAR with no apparent trend and three springs and one set of stream reaches (Antelope section 2) were rated as PFC in 2008. Modifications including fencing and providing other water sources to minimize impact on existing water sources are being considered.

The Standard for Biodiversity is currently not being met but progressing towards for the Calcutta Allotment #1100. Although biodiversity standards are met for three of the four ecological sites assessed, the Dry Floodplain site is lacking Great Basin Wildrye. This grass has the potential to produce 800-1200 pounds/acre of biomass, and is not currently producing that amount. This grass is found mostly in shrub canopies and does not appear to have vigor or diversity of age groups. Four of seven springs were rated as FAR and juniper has encroached on up to 29% of the allotment.

<u>PART IV - FOR THOSE STANDARDS NOT ACHIEVED, SUMMARY OF CONTRIBUTING FACTOR(S) DETERMINATION AND SUPPORTING RATIONALE</u>

A. DETERMINATION OF CONTRIBUTING FACTORS

Non achieved Standard (a) (from Dart III):

Part I:

and Utilization

Rights-of-way

☑ Outdoor Recreation

Timber Production

Mineral Exploration and Development

As of the date of the completion of this form, an examination of the information listed in Part II and recent field visits, if applicable, indicate that the following are contributing factors for failing to achieve the standards as indicated in Part III for the area identified in

Non-achieved Standard (S) (Hom P	an iii).
FLPMA Principal or Major information date)	Uses Information Reference (what data was reviewed - type and
☑ Domestic Livestock Grazing	✓ actual grazing use grazing "licenses" ✓ utilization records 2003, 2006-2008 Actual use reports dating from 1982 Use pattern mapping/utilization data for 1982, 1983, 1985-1990,
	ographs 8 photo-plots throughout the seeded area, started in 1980, retaken periodically
	since plot inception.
☑ other	Rangeland (vegetation) Inventory conducted in 1977 One trend plot established in the native pasture in 1983 (frequency data and photo-plots) Three trend plots established in 1987 in the seeded portion of the allotment (frequency data, cover data, and photo-plots) Rangeland Health Assessments conducted in April, 2008 Gap data, line-point intercept data, soil stability data and trend photo-plot pictures taken in April, May, and June of 2008.
Fish and Wildlife Development	·

Other Events or Circumstances Considered Information Reference (what data was reviewed - type and information date)

road building

☑ road building

utilization

Wild horse and Burro use census / distribution data _____

Roads appear to have a slight impact on Antelope Spring.

☑ exotic plant presence	other cheatgrass is found throughout the allotment, but is now found in smaller amounts the	an wha
insect impacts abnormal fire frequency or lack of fire abnormal climatic events	vas found in the past.	an what
CONTRIBUTING FACTOR(S) (LIST):		
Current and historic livestock grRoadsWater distribution	ızing	
B. <u>RATIONALE FOR CONTRIBUT</u>	NG FACTOR DETERMINATION	
monitoring has indicated that current liver distribution in portions of the allotment call Spring may contribute some negative impronitoring, as well as past and present values of the investoric livestock grazing, and that non-at grazing is attributed to have contributed to standards for biodiversity. Increasing jurnshrub understory. Although this site (Classperience decreases in biodiversity. Jurnshrub uniper has been found to occur western juniper has been found to occur western juniper has been found to occur part v - BLM STAFF WHO REVIEW IMPLEMENTATION OF APPROPRIA STANDARD(S) The following staff have participated in contributing factor determination(s). Elias Flores, Wildlife Biologist Alan Uchida, Watershed Specia Kathryn Dyer, Rangeland Mana		f water lope and by ock and ill sion of T AND G THE
SIGNATURES:	TITLES:	
	Wildlife Biologist	
	Watershed Specialist	
	Rangeland Management Specialist	
	Sup. Rangeland Management Specialist/Wild Horse Special	list
	ot achieved and after considering all relevant information, we recommend that the pri action to achieve standards in the area identified in Part I be (check one):	iority foi

We base our recommendation on the following ratings of the following factors:

low .

☑ high

medium

Severity of resource impacts resulting from non-achievement of the standard -	high ☑ medium low
Size of affected area -	about 1334 acres uplands, & less than 5 acres
riparian	
Ability to arrest further degradation -	easily done ☑ unknown difficult
Other: It appears as though the riparian areas that are FAR contain the veg	getative components necessary to achieve PFC through
modification of use. The uplands not meeting standards (Dry Floodplain) has	s all of the vegetative components necessary to achieve
standards, and should respond well to slight modifications in management.	
<u>Administrative</u>	
Proportion of federal land in the allotment -	
Pending administrative actions (permit lease renewal / transfer, etc.) -	☑ pending not pending until FY
Other	

Biological / Physical

Legal re	ted cooperation of the permittee / lessee - quirements	☑ expected☑ compelling	not expected not compelling	unknown
Econom	ic Considerations			
	I - DOCUMENTATION OF THE INVOLVEMENT OF PERMITTE S STANDARDS CONFORMANCE DETERMINATION AND CON			
for publi	the occurrence of public participation (e.g. permittee, interested c participation that pertains to the review of standards achievem summary):	-	-	• • • • • • • • • • • • • • • • • • • •
	II - AUTHORIZED OFFICER'S DETERMINATION AND PRIONIENTATION	RITY FOR APPROPRI	ATE ACTION DE	VELOPMENT AND
()	Existing grazing management practices or levels of grazing us significant progress towards the Approved Northeastern Califor Livestock Grazing of July, 2000 and conforms with the Guideline	rnia and Northwestern N	Nevada Standards	
(X)	Existing grazing management practices or levels of grazing use change prior to the next grazing season to promote achieveme Nevada Standards and Guidelines for Livestock Grazing of July, Management.	nt of the Approved Nort	heastern Californ	ia and Northwestern
health st	eviewed and concur with the determinations and supporting rational candards documented herein and, in the cases where standards at ting factor(s) for failure to achieve the standards. I have deate action to achieve significant progress to achieve standards for	are not achieved, the det etermined that the prior	ermination and ra ity for developing	tionale regarding the gand implementing
Priority:	☑ high medium low			
Staff is o	lirected to develop appropriate action for my consideration and im	plementation in accorda	nce with this prior	ity.
SURPRI	SE FIELD MANAGER D)ATE		

Works Cited

COMMENTS:

Larrucea, E. (2006). Surprise Field Office Pygmy Rabbit (Brachylagus idahoensis) Survey. Bureau of Land Management.

Soule, P. T., & Knapp, P. A. (1999). Western juniper expansion on adjacent disturbed and near-relict sites. *Journal of Range Management*, 525-533.

Attachment A

Below are summarized the Rangeland Health Assessment Field Data Indicators Observed on the Calcutta Allotment, April 2008:

Claypan 10-14" evaluation site:

Rangelan	nd Health Attributes	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	Σ
Soils	Soils/Site Stability Indicators 1-9 & 11				8,4	1,2,3,5,6, 7,9,11	10
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 &14			14	4,8,10	1,2,3,5, 9,11	10
Biotic	Biotic Integrity Indicators 8-9 & 11-17			14,15,16	8,12	9,11,13,17	9

Dry Floodplain evaluation site:

Rangelan	d Health Attributes	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	Σ
Soils	Soils/Site Stability Indicators 1-9 & 11				4,8,9	1,2,3,5, 6,7,11	10
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 &14			10,14	4,8,9	1,2,3, 5,11	10
Biotic	Biotic Integrity Indicators 8-9 & 11-17			12,14, 15,17	8,9	11,13,16	9

Sodic Terrace 8-10" evaluation site:

Rangelar	nd Health Attributes	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	Σ
Soils	Soils/Site Stability Indicators 1-9 & 11				4	1,2,3,5,6, 7,8,9,11	10
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 &14				4	1,2,3,5,8, 9,10,11,14	10
Biotic	Biotic Integrity Indicators 8-9 & 11-17				12,15	8,9,11,13,1 4,16,17	9

Loamy 10-12" evaluation site:

Rangelan	d Health Attributes	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	Σ
Soils	Soils/Site Stability Indicators 1-9 & 11				2	1,3,4,5,6, 7,8,9,11	10
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 &14			14	2,10	1,3,4,5, 8,9,11	10
Biotic	Biotic Integrity Indicators 8-9 & 11-17			14,15	12,17	8,9,11, 13,16	9

Attachment B

Below are summarized the Line-Point Intercept Transect Data collected on the Calcutta Allotment, April 2008:

Claypan 10-14"

	Canopy Cover (%)	Bare Ground (%)	Basal Cover (%)	Litter (%)
Calcutta Transect Data	59%	15%	11%	40%
Ecological Site Reference Data	25 – 35% (canopy and basal combined)	± 55%	25 – 35% (canopy and basal combined)	Between plant interspaces (±35%) and litter depth is <½ inch.

At the time this data was collected, the abundance of forbs contributed to the high canopy cover represented above.

Dry Floodplain

	Canopy Cover (%)	Bare Ground (%)	Basal Cover (%)	Litter (%)
Calcutta Transect Data	47%	29%	18%	39%
Ecological Site Reference Data	shrub canopy less than 25%; foliar cover of perennial herbaceous plants ± 50%. (canopy and basal combined)	± 25%	shrub canopy less than 25%; foliar cover of perennial herbaceous plants ± 50%. (canopy and basal combined)	Between plant interspaces (± 35%) and depth of litter <1 inch.

The presence of biotic crust in this area increased the amount of basal cover, and decreased the amount of bare ground.

Sodic Terrace 8-10"

	Canopy Cover (%)	Bare Ground (%)	Basal Cover (%)	Litter (%)
Calcutta Transect Data	42%	26%	8%	60%
Ecological Site Reference Data	shrub canopy ±20%; basal area for perennial herbaceous plants to 5%. (canopy and basal combined)	± 60%	shrub canopy ±20%; basal area for perennial herbaceous plants to 5%. (canopy and basal combined)	Between plant interspaces (< 5%) and depth of litter is ± 1/4 inch.

Loamy 10-12"

_	Canopy Cover (%)	Bare Ground (%)	Basal Cover (%)	Litter (%)
Calcutta Transect Data	52%	22%	13%	56%
Ecological Site Reference Data	shrub canopy 15 to 25%; foliar cover of perennial herbaceous plants ± 40%. (canopy and basal combined)	± 40%	shrub canopy 15 to 25%; foliar cover of perennial herbaceous plants ± 40%. (canopy and basal combined)	Between plant interspaces (± 25%) and litter depth is ± ½ inch.

Attachment C

Below are summarized the Gap Intercept Transect Data collected on the Calcutta Allotment, April 2008:

Clavpan 10-14"

Type of Gap	% of line in 1- 2 foot gaps	% of line in 2.1- 3 foot gaps	% of line in 3.1- 6 foot gaps	% of line in >6 foot gaps	Total % of 100 foot line in gaps
Canopy	20	11.2	8.4	0	39.6
Basal	17.1	12.7	47.2	20.6	97.6

Dry Floodplain

Type of Gap	% of line in 1- 2 foot gaps	% of line in 2.1- 3 foot gaps	% of line in 3.1- 6 foot gaps	% of line in >6 foot gaps	Total % of 100 foot line in gaps
Canopy	10	8.3	24.5	13.1	55.9
Basal	5.3	11.7	17.9	51	85.9

Sodic Terrace 8-10"

Type of Gap	% of line in 1- 2 foot gaps	% of line in 2.1- 3 foot gaps	% of line in 3.1- 6 foot gaps	% of line in >6 foot gaps	Total % of 100 foot line in gaps
Canopy	19.1	14.4	15.5	7.7	56.7
Basal	12.8	9.3	21	41.9	85

Loamy 10-12"

Type of Gap	% of line in 1- 2 foot gaps	% of line in 2.1- 3 foot gaps	% of line in 3.1- 6 foot gaps	% of line in >6 foot gaps	Total % of 100 foot line in gaps
Canopy	21.7	7.6	10.3	0	39.6
Basal	21.1	18.5	20.1	9.5	69.2